FOREWORD

Special Section on Analog Circuits and Related SoC Integration Technologies

Welcome to this Special Section on Analog Circuits and Related System-on-a-Chip (SoC) Integration Technologies. Never-ending demands for performance improvements in electronic systems are driving the research and development of nanometer-scale SoC integration. Technology scaling is yet an effective way for performance improvements of the SoC. For analog circuits, however, design challenges from various aspects are required to accommodate them in the nanometer-scale SoC and to exploit the advantage of scaling. I believe that this special issue on analog circuits will contribute researchers working in this field to share innovative and new ideas and overcome difficult analog circuits design in the next-generation nanometer-scale SoC.

This special section includes 14 regular and 10 brief papers selected from 40 submissions by a peer review process. The selected papers cover wide range of topics including regulators, RF and millimeter-wave circuits, data converters, elemental circuit techniques for LNAs, switches and noise generators, layout techniques and diagnosis of analog circuits.

In addition to these fine papers, this special section has two invited papers by world-famous researchers in data converters and digital RF circuits. The first invited paper, by Dr. A. Iwata, reviews the background calibration techniques for high-speed data converters. The second invited paper, by Dr. O. Eliezer and Prof. R.B. Staszewski, presents built-in measurement techniques for wireless transceivers.

On behalf of the editorial committee, I would like to express my sincere appreciation to all those who submitted manuscripts for this special section and to all the reviewers. I would like to thank all the editorial committee members, as listed below, for their enthusiastic support of the editorial work. Finally, I would like to express my special thanks to Mr. Yoshihisa Fujimoto and Dr. Tetsuya Hirose for their hard works as secretaries.

Shoji Kawahito, Guest Editor-in-Chief

Shoji Kawahito *(Member)* received the Ph.D. degree from Tohoku University, Sendai, Japan, in 1988. In 1988, he joined Tohoku University as a Research Associate. From 1989 to 1999, he was with Toyohashi University of Technology. From 1996 to 1997, he was a Visiting Professor at ETH, Zurich. Since 1999, he has been a Professor with the Research Institute of Electronics, Shizuoka University. His research interests are in CMOS imaging devices, sensor interface circuits and mixed analog/digital circuits designs. He has authored or coauthored more than 250 refereed journal and international conference papers. Dr. Kawahito has received many awards including the Outstanding Paper Award at the 1987 IEEE International Symposium on Multiple-Valued Logic, the Beatrice Winner Award for Editorial Excellence at the 2005 IEEE International Solid-State Circuits Conference, and the IEICE Electronics Society Award in 2010. He is a Fellow of the IEEE, a Fellow of the Institute of the Image Information and Television Engineers and a member of the Society of Photo-Optical Instrumentation Engineers.